Shared Pointer Exercises

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std::shared_ptr

- Briefly describe std::shared_ptr

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std::shared_ptr structure

- Briefly describe the structure of the shared_ptr class

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Initialization

- Give two ways to create an initialized std::shared_ptr object
- Is there any reason to prefer one approach over the other?

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shared_ptr copying

- Describe what happens when a shared_ptr object is created as a copy of another object

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shared_ptr assignment

- Describe what happens when a shared_ptr object is assigned to another shared_ptr object

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shared_ptr operations

- Write a simple program which creates an initialized shared_ptr object
- Alter your program so that it creates another object which is a copy of the first shared_ptr
- Alter your program so that it creates an uninitialized shared_ptr object and assigns the first object to it
- After creating each object, print out the value of its data

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shared_ptr and threads

- What issues arise when shared_ptr is used in a multithreaded program?
- What impact do these issues have on the performance of shared_ptr?

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Shared Pointer Applications

- Give an example of a programming problem where shared_ptr could be useful

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